



# RSI

**SatCom Technologies**

## 5.5 Meter Satellite Earth Station Antenna

### FEATURES

- **Ku-Band meets FCC requirements for 2° spacing and Intelsat Standard E-2 performance specification**
- **C-Band meets Intelsat Standard G performance specification**
- **Flexible, tube-type mount allows 360° azimuth sector positioning**
- **Easy rooftop or ground installation**
- **Large hub protects electronics and allows easy access for maintenance**

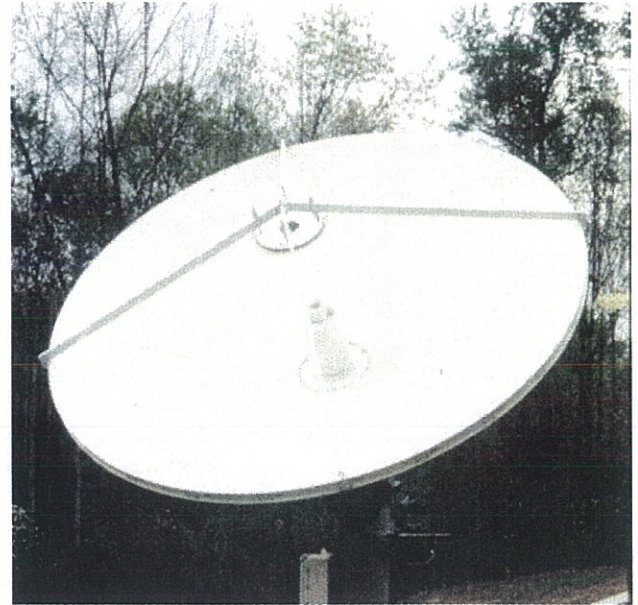
### DESCRIPTION

The Models 551CF (C-Band) and 551KS (Ku-Band) antennas are designed to provide economical, high performance video, message, and data communications. The Model 551CF meets the Intelsat Standard G performance specification and the Model 551KS meets FCC requirements for 2° satellite spacing and the Intelsat Standard E-2 performance specification.

The antenna employs 24 aluminum AccuShape<sup>1</sup> reflector panels and dual-shaped Cassegrain optics. Both models feature corrugated horns for high cross-polarization isolation levels.

The panels are attached to radial support members which connect to a central hub. The hub also serves as a weather-resistant enclosure for protection of electronic components while allowing easy access to the equipment for maintenance.

The elevation-over-azimuth mount consists of an upper elevation trunion rotating on a heavy-duty ball bearing and supported by a tubular steel kingpost. The mount is available in both manual and motorized versions. Manual elevation and Azimuth positioning is accomplished with threaded rod assemblies.



The eight-hole flange on the bottom of the tube-type kingpost interfaces to a foundation or a rooftop platform. The unique kingpost design allows unrestricted 360° azimuth sector positioning which minimizes problems with determining foundation heading during installation. Once the desired azimuth sector is determined, the drive unit is secured and the position is calibrated. The azimuth operational sector is 45° for manual drive and 120° continuous for motorized versions. This sector can be shifted at any time without special tools.

Optional motorized azimuth and elevation actuators are available as well as a motorized polarization drive unit. Manual drive antennas can have motorized drive options added in the field.

The RSI Precision Controls Model 100 Antenna Control System is available for programmable control and tracking inclined orbit satellites.

RSI SatCom Technologies Model 4050 is an economical, three-axis jog controller which is also available. See separate data sheets for more information.

### OPTIONS

- Multiple Feeds Available
- Motorized Elevation, Azimuth and Polarization
- Lightning Protection Kits
- Feed Rain Deviator
- Hub Fans, Light and Duplex AC Outlets
- Cross-Axis Waveguide Kits
- Deicing Systems

<sup>1</sup>AccuShape<sup>©</sup> is a precision metal contouring process proprietary to RSI.

**Electrical**

	C-Band (Circular 4-Port Feed)		Ku-Band (Linear 4-Port Feed)	
	Receive	Transmit	Receive	Transmit
Frequency (GHz)	3.625-4.2	5.85-6.425	10.95-12.75	14.0-14.5
Gain (midband, at hub interface)	45.7 dBi	49.0 dBi	55.0 dBi	56.5 dBi
VSWR (max)	1.25:1	1.25:1	1.25:1	1.25:1
Beamwidth (Typical)				
-3 dB	0.97°	0.62°	0.30°	0.25°
-15 dB	0.94°	1.24°	0.60°	0.50°
First Sidelobe Level (Typical)	-14 dB	-14 dB	-14 dB	-14 dB
Radiation Pattern	Meets Intelsat G specifications		Meets Intelsat and FCC specifications	
Antenna Noise Temperature (ref. LNA Interface)				
10° Elevation	47 K		54 K	
20° Elevation	38 K		44 K	
30° Elevation	34 K		38 K	
Power Handling (total)		10 kW CW		2 kW CW
Axial Ratio (max)	0.5 dB (1.06 var)	0.5 dB (1.06 var)		
Cross Polarization (min)				
On Axis			35 dB	35 dB
Off Axis			35 dB	35 dB
Feed Port Isolation (min)				
Rx/Rx	18 dB		35 dB	
Tx/Rx		85 dB		85 dB
Tx/Tx		18 dB		35 dB
Waveguide Interface	CPR229G (2)	CPR137G (2)	WR75 (2)	WR75 (2)

Note: Other bands, higher power handling and special wideband feeds are available; Noise temperatures assume clear horizon.

**Mechanical**

Antenna Diameter	5.5 Meters
Antenna Type	Cassegrain
Reflector Construction	24 panels, AccuShape®
Mount Type	Elevation-over-Azimuth (Tube)
Antenna Travel	
Elevation	5° to 90° continuous
Azimuth	360° gross adjustment
Manual	45° continuous sector
Motorized	120° continuous sectors
Polarization Adjustment	±90° continuous
Hub Dimensions	φ38" x 40"
Antenna Travel Rates	
Elevation and Azimuth	5% - 10% HPBW/sec
Polarization	3°/sec
Weight	
Net	2,600 lbs.
Shipping	3,100 lbs.
Shipping Volume	500 ft. <sup>3</sup>

**Environmental**

Wind Loading @ 59°F	
Operational	45 mph gusting to 65 mph
Survival	125 mph with no ice; 87 mph with 1" radial ice (reflector stowed at zenith)
Pointing Accuracy	
30 mph gusting to 45 mph	.035° rms
45 mph gusting to 65 mph	.070° rms
Temperature Range	-40°F to 125°F Manual Drives -20°F to 125°F; -40°F to 125°F (optional) Motorized Drives
Atmospheric Conditions	Salt, pollutants, and corrosive contaminants as found in coastal and industrial areas

\* Specifications subject to change without notice



### 5.5 METER ANTENNA CRATING DIMENSIONS

	<u>Length</u>	<u>Width</u>	<u>Height</u>	<u>Weight</u>
Reflector Panels - crate	112 in.	64 in.	48 in.	1,011 lbs.
Mount - pallet	102 in.	36 in.	64 in.	1,309 lbs.
Radial - crate	150 in.	22 in.	20 in.	1,100 lbs.
Hub - pallet	48 in.	48 in.	58 in.	780 lbs.
Actuators - crate	92 in.	35 in.	17 in.	550 lbs.
Subreflector - crate	40 in.	40 in.	22 in.	160 lbs.
Electronics/Feed - crate	48 in.	48 in.	40 in.	650 lbs.
Anchor Bolts - crate	34 in.	32 in.	4 in.	81 lbs.
<u>Optional Equipment</u>				
PC Controls - OCU	35 in.	25 in.	17 in.	75 lbs.
Miscellaneous	38 in.	31 in.	21 in.	175 lbs.
Power Drive Unit	38 in.	36 in.	20 in.	200 lbs.
High Speed	28 in.	26 in.	19 in.	100 lbs.
Tracking Receiver	32 in.	25 in.	13 in.	40 lbs.
<u>Air Shipment</u>				
Panels in fully enclosed crate				1,220 lbs.
Panels in fully enclosed heated crate				1,378 lbs.

